

**A Nature-Based Social-Emotional Approach to Supporting
Young Children’s Holistic Development in Classrooms With and Without Walls:
The Social-Emotional and Environmental Education Development (SEED) Framework**

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ABSTRACT

This paper describes a nature-based social-emotional approach to supporting young children’s holistic development that can be applied in a range of early childhood settings from forest kindergartens and nature-based preschools to more traditional center-based early childhood programs. *The Social-Emotional and Environmental Education Development (SEED) Framework* blends early childhood education, environmental education, and social-emotional development through the integration of best practice recommendations from (a) *National Association for the Education of Young Children Early Childhood Program Standards*, (b) *Early Childhood Environmental Education Programs: Guidelines for Excellence*, and (c) *Pyramid Model for Supporting Social-Emotional Competence in Infants and Young Children*. The *SEED Framework* provides early childhood programs a guide for integrating and infusing a nature-based social-emotional approach throughout all aspects of their program.

Keywords: Early childhood education, environmental education, social-emotional development

In an article addressing the essence of early childhood environmental education (ECEE), Ruth Wilson (2015) emphasized the importance of working for both an environmentally sustainable future and for the wellbeing of young children. A range of programmatic approaches exist that support ECEE’s blended focus on early childhood and environmental education from forest kindergartens and nature-based preschools to more traditional early childhood programs that emphasize connecting with nature. One could look at a range of early childhood programs on a continuum from a sole focus on the social/emotional and/or academic education of young children to a sole focus on nature and the environment, with ECEE programs falling in the middle representing a focus on both areas.

In Wilson’s discussion of the essence of ECEE she went on to explore whether the field goes beyond this blending of disciplines and has to do with “the making of beautiful people – that is people who live with a sense of wonder, sensitivity to beauty, respect and compassion for others, a deep appreciation of the natural world, and an interest in creating a more peaceful, just, and sustainable world” (2015, p. 7). She posed the question of how we would like children to finish the statement, “I am a person who . . .” (2015, p. 7) as a guiding question to define the essence of the field.

As a parent and an educator, this is a question that I have thought about often. The list that Wilson and her colleagues identified included “empathy, respect, attention, quiet reflecting, appreciation of diversity, and the ability to adapt to different situations” (Wilson, 2015, p. 7). The answer I have come to regarding Wilson’s question centers on the importance of caring and supporting young children to become citizens who care for themselves, care for others, and care for the world around them. This perspective is aligned with Nel Noddings’ work on the ethics of care that emphasizes the significance of caring as a fundamental aspect of education (Noddings, 2005). Noddings identifies

multiple domains of caring, including: (a) caring for self, (b) caring for intimate others, (c) caring for strangers and distant others, (d) caring for animals, plants, and the earth, (e) caring for the human-made world, and (f) caring for ideas (Noddings, 1984; 2005). In her discussion of a caring pedagogy, Noddings' has gone so far as to suggest that "caring is the very bedrock of all successful education and that contemporary schooling can be revitalized in its light" (Noddings, 2005, p. 27). Nature provides an incredible resource for teaching and learning about caring and I propose that emphasizing caring through children's social-emotional development in ECEE enhances our ability to do work that is both good for the earth and for the children and that supports "the making of beautiful people" (Wilson, 2015).

The Social-Emotional and Environmental Education Development (SEED) Framework

The *SEED Framework* is a nature-based social-emotional approach to early childhood education that seamlessly blends early childhood education, environmental education, and social-emotional development through the integration of best practice recommendations from (a) *National Association for the Education of Young Children (NAEYC) Early Childhood Program Standards* (NAEYC, 2008), (b) *Early Childhood Environmental Education Programs: Guidelines for Excellence* (NAAEE, 2010), and (c) *Pyramid Model for Supporting Social-Emotional Competence in Infants and Young Children* (Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003). The *SEED Framework* is not a new intervention package or curriculum, but a systematic framework for establishing a nature- and connection-based culture and for supporting effective teaching and learning environments that promote "caring and relationship both as an educational goal and as a fundamental aspect of education" (Smith, 2004, 2016, para. 1).

The *SEED Framework* provides early childhood programs a guide for integrating and infusing a nature-based social-emotional approach throughout all aspects of a program, striking a balance between an emphasis on child development, an emphasis on environmental sustainability, and an emphasis on social and emotional competence. Figure 1 provides a visual representation of the three-way continuum addressed in the *SEED Framework*. Programs of any type from forest kindergartens and nature-based preschools to more traditional childcare programs can identify where their program currently sits on this three-way continuum and utilize the *SEED Framework* to enhance their integration of early childhood education, environmental education, and social-emotional development.

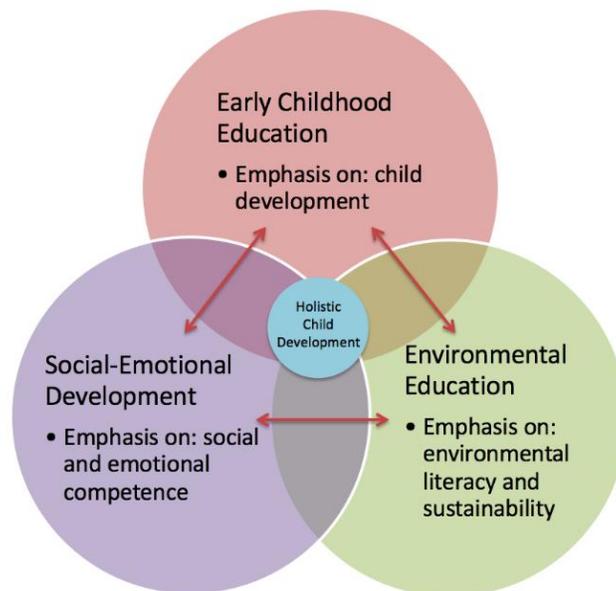


Figure 1. Integrated Disciplines in the *SEED Framework*: Three-Way Continuum.

Theoretical Foundations of the SEED Framework

Early childhood education. A primary goal of early childhood education is to support all areas of child development including social-emotional, physical, cognitive, and language development (Head Start, 2016). Child development in the early years is incredibly important as it establishes the basic architecture and function of the brain and provides a foundation for children's future wellbeing and learning (McCain, Mustard & Shanker, 2007; UNICEF, 2016). Several key principles of child development and learning inform the relationship-driven, individualized and comprehensive approach of the *SEED Framework*.

Early development and learning occurs in and is influenced by multiple social and cultural contexts including a child's family, educational setting, and community, as well as within the broader society (Bronfenbrenner, 1979). Providing responsive, stable and nurturing relationships and rich learning experiences in the earliest years provides lifelong benefits for learning, behavior and both physical and mental health (National Scientific Council on the Developing Child, 2004). In fact, nurturing relationships with responsive adults are necessary for several key areas of children's development, including language and communication, empathy and cooperation, peer relationships, and self-regulation (Shonkoff & Phillips, 2000). It is through these nurturing and responsive relationships that children experience being cared for, a necessary first step to developing their own caring behavior (Noddings, 2005).

While many aspects of child development follow relatively predictable sequences there is substantial variation within and across children that impacts decisions about curriculum and teaching (NAEYC, 2009). Developing caring relationships with children allows educators to get to know individual children's interests, strengths and needs, to provide a range of teaching strategies that meet children's different learning needs, and to challenge children to achieve what is just beyond their current understanding. It is through this skilled individualization of instruction and support that educators encourage young children to try and master new and progressively more advanced challenges (NAEYC, 2009).

Effective educators are also acutely aware of the integrated nature of child development as development in one domain influences and is influenced by development in other domains. This interrelatedness can lead to learning in one domain fostering or limiting development in other areas (Shonkoff & Phillips, 2000). Social-emotional development, for example, is influenced by children's language development and communication skills which is, in turn, impacted by children's participation in social interactions with others (Dickinson & Tabors, 2001). Teaching children well means providing comprehensive educational opportunities that support development and learning across domains (Shonkoff & Phillips, 2000). The *SEED Framework* addresses the interrelated nature of child development through the integration of early childhood education, environmental education and social-emotional development.

National Association for the Education of Young Children Early Childhood Program Standards. NAEYC is "the foremost professional organization of the early childhood field" that "works to promote high-quality early learning for all young children, birth through age eight, by connecting early childhood practice, policy, and research." (NAEYC, 2016, para. 1). NAEYC offers accreditation to early childhood programs that "deliver the highest quality early care and education" aligned with developmentally appropriate practice (DAP) and principles of child development (NAEYC, 2016, para. 4). NAEYC accreditation focuses on ten program standards (hence known as *NAEYC Standards*): (a) relationships, (b) curriculum, (c) teaching, (d) assessment of child progress, (e) health, (f) teachers, (g) families, (h) community relationships, (i) physical environment, and (j) leadership and management (NAEYC, 2008). These program standards can be addressed within a range of programmatic approaches and philosophies and have been integrated into the *Early Childhood Environmental Education Programs: Guidelines for Excellence* developed by the North American Association for Environmental Education, (2010).

Early childhood environmental education. While the goal of the environmental education field as a whole focuses on developing an environmentally literate society who is motivated and committed to prevent and solve environmental challenges (UNESCO, 1976), the task of environmental education for young children focuses on emotional attachment to the natural world and the need "to forge the bond between children and nature" (NAAEE, 2010, p. 4). As this emotional connection and love for the natural world grows, environmental literacy and

commitment to work toward environmental sustainability follow (NAAEE, 2010). Experiences with the environment early in life markedly impact life-long attitudes, values and interactions with the natural world and children who do not develop an emotional connection with the natural world early in life are at risk for never doing so (Tilbury, 1994; Wilson, 1994).

With a focus on respect and emotional attachment with the natural world, Ruth Wilson (1994) identified the following as key components of early childhood environmental education: (a) the development of a sense of wonder, (b) appreciation for the beauty and mystery of the natural world, (c) opportunities to experience the joy and closeness to nature, (d) respect for other creatures, (e) the development of problem-solving skills, and (f) the development of interest and appreciation in the world around us. This focus aligns with *NAEYC Standards* and principles of child development that lead us to provide relationship-driven, individualized and comprehensive early childhood education.

The natural world provides rich opportunities for children to develop relationships and to learn about and experience caring – for themselves, for others and for plants and animals. In a comparison of school play spaces, researchers found that children play more cooperatively and engage in more creative forms of play in green spaces (Bell & Dymont, 2006). Children who had regular opportunities for unstructured free play outdoors were healthier, happier and better able to get along with others (Burdette & Whitaker, 2005). As educators develop relationships with children and identify their strengths, needs and interests, the natural environment can provide unlimited opportunities for individualizing and adapting educational experiences. Nature is dynamic and ever-changing with constant new sensory stimuli to support learning. For example, the natural environment provides uneven terrain and variable conditions that enhance motor development (Hanscom, 2016). With rain comes heavy mud and slippery surfaces, with snow comes cold textures that children’s feet sink into and across the seasons there are obstacles to climb, secret spaces to explore and animals to discover and investigate. These changing conditions also provide dynamic opportunities for social interactions and problem-solving, for the use of new descriptive language and for the development of curiosity, questioning and experimenting (Hanscom, 2016; Kellert, 2005). The natural world provides an ideal environment for supporting comprehensive development across domains and the *SEED Framework* supports this comprehensive approach by integrating early childhood education, environmental education and social-emotional development. As we seek to promote children’s emotional connection with the natural world, incorporating a central focus on social-emotional competence and the importance of caring is a logical and important complement.

Early Childhood Environmental Education Programs: Guidelines for Excellence. The *Early Childhood Environmental Education Programs: Guidelines for Excellence* (hence known as the *ECEE Guidelines*) provides “recommendations for developing and administering high-quality environmental education programs for young children from birth to age eight, with a focus on ages three to six” (NAAEE, 2010, p. 2-3). ECEE guidelines identify six key characteristics of high-quality early childhood environmental education programs that are well-aligned with developmentally appropriate practices and NAEYC program standards: (a) program philosophy, purpose, and development, (b) developmentally appropriate practices, (c) play and exploration, (d) curriculum framework for environmental learning, (e) places and spaces, and (f) educator preparation (NAAEE, 2010).

Social-emotional development. Social-emotional development for young children includes the developing capacity to (a) form close and secure adult and peer relationships, (b) experience, manage, and express a full range of emotions, and (c) explore the environment and learn – all in the context of family, community, and culture (Cohen, Oser, & Quigley, 2012). Social-emotional development includes skills that support school readiness and prepare children for lifelong learning such as confidence, curiosity, intentionality, self-control, relatedness, capacity to communicate, and cooperativeness (Waltz, 2013). Social and emotional competence plays an important role in preparing young children to engage in cognitive tasks (Perry, Holland, Darling-Kuria & Nadiv, 2011) and has been shown to more accurately predict academic performance in 1st grade than cognitive skills and family backgrounds (Fox & Smith, 2007). Social-emotional development is also clearly linked to caring and to traits identified by Wilson (2015) and her colleagues such as empathy, respect, and appreciation of diversity.

Children who do not have strong social-emotional skills often engage in challenging behaviors such as aggression, defiance, tantrums, and destruction of property and are frequently identified by teachers as “not ready to learn” (Perry et al., 2011). Teachers consistently report children’s behavior as their single greatest concern (Alkon, Ramler, & MacLennan, 2003; Joseph & Strain, 2003) and identify behavior management and ways to promote social and emotional competence as the top areas in which they need training (Yoshikawa & Zigler, 2000). These concerns are not surprising given that rates of diagnosed Autism and Attention-Deficit/Hyperactivity Disorder as well as rates of challenging behaviors among young children are rising (Brauner & Stephens, 2006; Centers for Disease Control and Prevention, 2016a, 2016b).

The need for effective and efficient social-emotional supports is apparent and the connection between social-emotional development and the potential goal of ECEE of making “beautiful people” is clear (Wilson, 2015, p. 7). The *SEED Framework* seeks to support Wilson’s depiction of the essence of ECEE by blending the fields of early childhood education and environmental education with research and recommendations focused on supporting social-emotional development in young children.

Pyramid Model for Supporting Social-Emotional Competence in Infants and Young Children. The *Pyramid Model for Supporting Social-Emotional Competence in Infants and Young Children* (hence known as the *Pyramid Model*) is a proactive prevention program that provides assessment driven, comprehensive support that focuses on redesigning environments to reduce problem behaviors and increase adaptive, pro-social behaviors (Fox et al., 2003; Horner, 2000; Powell & Dunlap, 2006). The *Pyramid Model* focuses on creating consistent, predictable, positive and safe environments for all children through the implementation of three tiers of intervention practice: universal promotion for all children; secondary preventions to address the intervention needs of children at risk of social emotional delays, and tertiary interventions needed for children with persistent challenges (Fox et al., 2003; see Figure 2). The primary focus within the *SEED Framework* is at the universal promotion level where effective prevention practices are put in place for all children in a program, including (a) building nurturing and responsive relationships, (b) careful planning of the physical environment, schedule, and materials, (c) teaching students about routines and expectations, and (d) acknowledging children for engaging in appropriate behavior (Fox et al., 2003). These practices are important, but they represent just one element of the *Pyramid Model*.

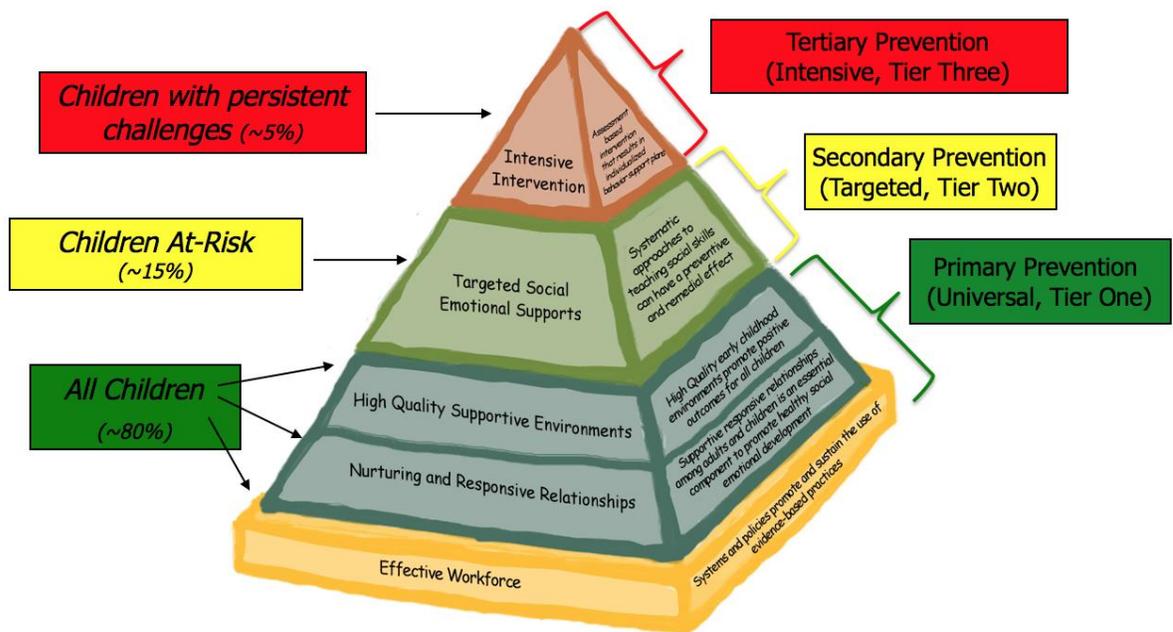


Figure 2. The Pyramid Model for Supporting Social Emotional Competence in Infants and Young Children.

The *Pyramid Model* is an adaptation of Positive Behavioral Interventions and Supports (PBIS: Horner, 2000), which is frequently applied on a school-wide level in K-12 schools. Literature on school-wide PBIS emphasizes the importance of effective practices to support valued outcomes for students but also goes further to emphasize the importance of collecting and using data to support effective decision-making as well as the importance of implementing efficient systems to support teachers and staff (Sugai & Horner, 2009). Figure 3 provides a visual representation of the four elements that serve as the core operating features of PBIS: (a) outcomes, (b) practices, (c) data and (d) systems. PBIS encourages programs to identify, define and acknowledge *outcomes* that are valued by students, families, and community members. As a whole, PBIS focuses on *outcomes* related to supporting social competence and academic achievement in children (Sugai & Horner, 2009). In order to achieve those desired outcomes, the PBIS model includes three additional elements. First, PBIS focuses on the identification and sustained use of evidence based *practices* to support student behavior (Sugai & Horner, 2009). Practices include the interventions and supports we put in place for students such as building positive relationships, clearly defining and teaching expectations and routines, and acknowledging children’s appropriate behavior. In addition to effective, evidence-based practices, PBIS calls for the use of *data* to support decision-making (Sugai & Horner, 2009). Utilizing data and observation allows teachers to narrow down problems and identify simpler and more effective solutions. It is akin to applying the scientific process to teaching and it is applicable with challenging behavior as well as with social and educational goals. Finally, the PBIS model addresses the need for developing efficient *systems* to support teachers in implementing effective practices and data collection or observation procedures (Sugai & Horner, 2009). Systems support sustainability of practices through proactive planning and design.

Following the *NAEYC Standards*, the *ECEE Guidelines*, and the *Pyramid Model*, the *SEED Framework* utilizes the systemic approach of PBIS to address valued outcomes and includes considerations for practical interventions, informative observation and data collection methods, and a systems perspective (see Figure 4). Guided by the emphases of the three integrated disciplines that inform the model, the *SEED Framework* focuses on *outcomes* related to promoting social competence, child development and environmental sustainability. Priority is given to the identification, adoption, adaptation, and sustained use of evidence-based and developmentally appropriate *practices* that are linked to these desired outcomes for children. Desired outcomes are also used to establish *observation and data* systems to evaluate implementation efforts and practices and to inform educators’ decision-making. Before any practice is put in place, *systems* for supporting implementers of the practice, such as professional development, resources, coaching, and coordination, are established.

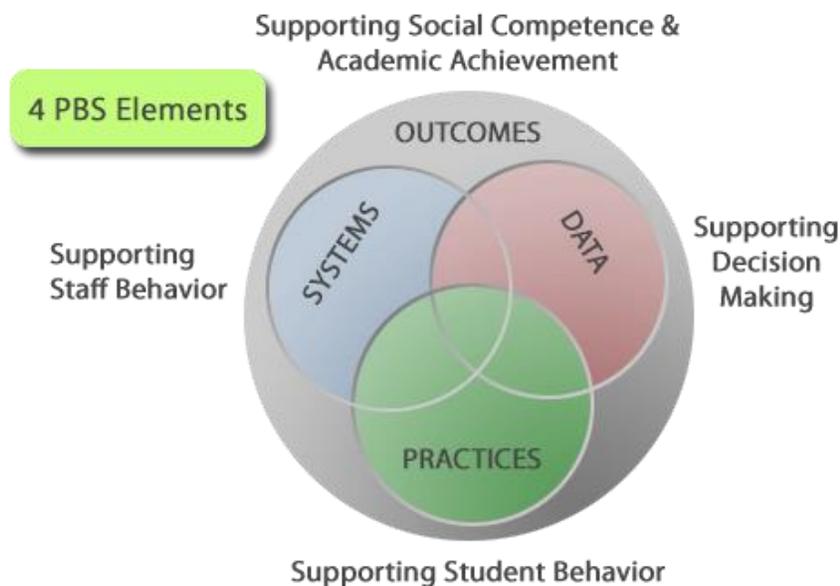


Figure 3. Four Elements of Positive Behavior Support: Outcomes, Practices, Data and Systems.

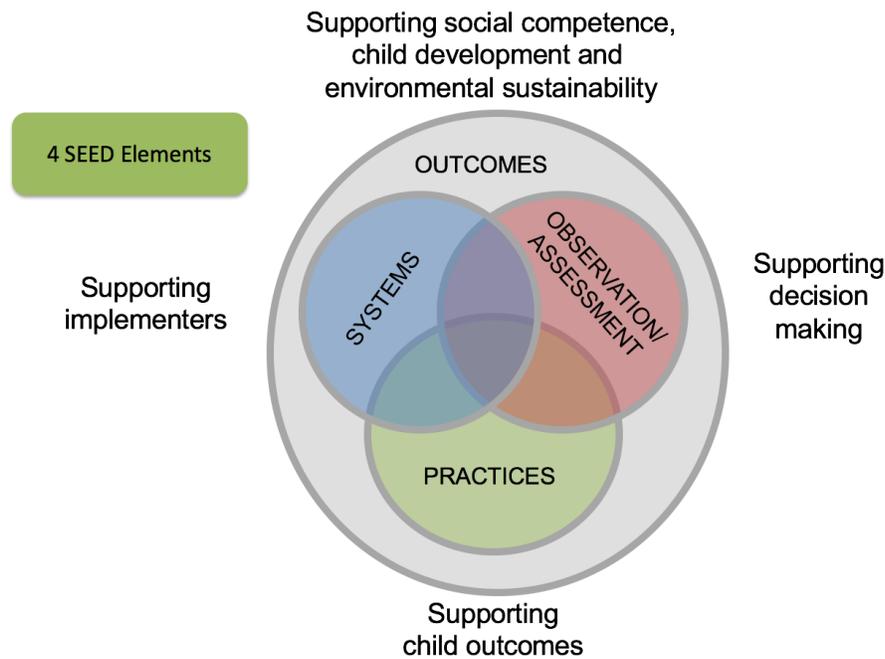


Figure 4. Four Elements of the SEED Framework: Outcomes, Practices, Data/Observation, and Systems.

SEED Framework Components

The following sections discuss the *SEED Framework* components and approach. Figure 5 provides a visual depiction of the key features of the *SEED Framework* in a flower diagram. At the center of the flower are essential program aspects that guide the work with children and establish the culture and environment of the learning space. The petals of the flower represent the curriculum areas that support children's growth. Finally, the teaching approach, observation protocols, and systems of staff support are represented by the rain, sun, and soil as each are necessary and valued features of the system that support growth and development. Table 1 provides an overview of how key features from the *NAEYC Standards*, the *ECEE Guidelines*, and the *Pyramid Model* are incorporated into the *SEED Framework*.

Defining program philosophy, values, and expectations. At the center of the *SEED Framework* (Figure 5), lies an early childhood program's philosophy, values, and expectations. Utilizing a nature-based social-emotional approach leads to a connection-based philosophy that recognizes our place within the world and our connections to ourselves, to one another, and to nature. The philosophy, values, and expectations for an early childhood program applying the *SEED Framework* includes a focus on (a) nature and the environment, (b) developmentally appropriate education of young children, and (c) creating a positive social culture. In addition to reflecting these priorities in a mission and vision statement, the *SEED Framework* calls for programs to define clear expectations and teaching practices that support children in developing and using caring, pro-social behavior and provide a common language that teachers, children, and families can use in the learning environment. These program expectations can almost be described as overarching character traits that we want all children to demonstrate. They give us the language of our learning community and help to shape specific rules that we expect across settings and routines (Carter & Pool, 2012).

In the *Pyramid Model*, common examples of program expectations focus on safety, respect, and responsibility. Incorporating a nature-based perspective guided by ethics of care (Noddings, 2005), the *SEED Framework* encourages early childhood programs to focus expectations on caring for oneself, for others, and for the

environment. Through this perspective early childhood programs can address important skills centered on safety, respect, and responsibility but they do so from a perspective of caring and connection – with one another and with the environment. For example, when children care for themselves by dressing appropriately for the weather and always staying where a teacher can see them, they engage in behaviors that are responsible and safe. When they care for others by taking turns or helping someone who is struggling, they are respectful in their interactions. When they care for their place by handling plants and animals gently and with respect or by asking permission before collecting natural items, they are again safe, respectful, and responsible. Adding this layer of clearly defined expectations aligned with a nature-based social-emotional approach, translates a program’s philosophy into hands-on practice for children, teachers, and families throughout the program.

Fostering nurturing and responsive relationships. Nurturing and responsive relationships represent another key feature for establishing an effective culture and environment in the learning space. Positive relationships for young children “are essential for the development of personal responsibility, capacity for self-regulation, for constructive interactions with others, and for fostering academic functioning and mastery” (NAEYC, 2008, Relationships section). The *SEED Framework* emphasizes the importance of supporting nurturing and positive relationships with children, families, and the community as well as with the natural environment. This comprehensive view of relationships supports children in recognizing that they are a part of the world of nature and enhances their learning from the natural world. As an example, David Sobel emphasizes the importance of developing relationships with animals stating that “cultivating relationships with animals, both real and imagined, is one of the best ways to foster empathy during early childhood” (1996, p. 13). It is important for us to consider the opportunities we are providing children to develop relationships with the environment as well as the relationships that we ourselves are developing and modeling with the environment.

Clearly defining and articulating program expectations that provide a common language and vision for the learning community that is focused on caring and connection (as described in the previous section) is a powerful first step in promoting nurturing and responsive relationships. As we use language and both model and support behaviors that emphasize caring, we support children’s connections and relationships and create a learning community where children feel safe and valued. Reaching out to families and the community further supports nurturing and responsive relationships and can lead to meaningful and productive collaborations.

Programs utilizing the *SEED Framework* are encouraged to examine their efforts to build positive relationships with children, families, the community, and the environment. Many programs will find that they have a lot to celebrate in the positive examples of relationship-building in their programs such as positive and respectful interactions with children, collaborative projects with families and the community, and clear and consistent examples of building connections with the environment. Programs may also find that they are strong in some areas of relationship building but that they have not intentionally focused on relationships with the community or the environment. Through evaluating and reflecting on their practices, programs may identify creative ways to improve relationships and connect their relationship-building efforts to the central philosophy of their program.

Developing high quality supportive environments. The last feature at the center of the *SEED Framework* (Figure 5) focused on establishing an effective culture and learning space is designing high quality supportive environments. NAEYC program standards require that programs have “a safe and healthful environment that provides appropriate and well-maintained indoor and outdoor physical environments” (NAEYC, 2008, Physical Environment section). They further specify that the environment include “facilities, equipment, and materials to facilitate child and staff learning and development” (NAEYC, 2008, Physical Environment section). ECEE guidelines provide similar and expanded recommendations for both indoor and outdoor places and spaces and include considerations for environmental sustainability with the following guidelines: (a) spaces and places enhance development across all learning domains, (b) natural components are integrated throughout places and spaces, (c) spaces and places are comfortable and inviting, (d) spaces and places are well-maintained, safe and accessible, (e) health, safety and risk are addressed through assessment, training, clear understanding of responsibilities and established emergency plans, and (f) programs and facilities model positive examples of environmental sustainability (NAAEE, 2010). High quality supportive environments in the *Pyramid Model* extend further beyond physical environments and focus on creating consistent, predictable, positive, and safe environments that include considerations for: (a) physical arrangement

Table 1

Alignment of SEED Framework with NAEYC Standards, ECEE Guidelines, and Pyramid Model

	SEED Framework	NAEYC Program Standards	ECEE Guidelines Key Characteristics	Pyramid Model Key Features
SEED Framework Component	Program philosophy, values and expectations	1. Relationships 2. Curriculum 3. Teaching	1. Program philosophy, purpose, and development	<ul style="list-style-type: none"> • High quality supportive environments
	Nurturing and responsive relationships	1. Relationships 7. Families 8. Community relationships	1. Program philosophy, purpose, and development	<ul style="list-style-type: none"> • Nurturing and responsive relationships
	High quality supportive environments	5. Health 9. Physical environment	5. Places and spaces	<ul style="list-style-type: none"> • High quality supportive environments
	Curriculum design	2. Curriculum 5. Health	4. Curriculum framework for environmental learning	<ul style="list-style-type: none"> • High quality supportive environments
SEED Systems Approach	Teaching practices	3. Teaching	2. Developmentally appropriate practices 3. Play and exploration	<ul style="list-style-type: none"> • Practices to support child outcomes
	Observation and assessment	4. Assessment	6. Educator preparation	<ul style="list-style-type: none"> • Data to support decision-making
	Systems	6. Teachers 10. Leadership and management	6. Educator preparation	<ul style="list-style-type: none"> • Systems to support implementers

Note: The numbers listed under *NAEYC Program Standards* and *ECEE Guidelines* are the standard or guideline numbers directly from those sources.

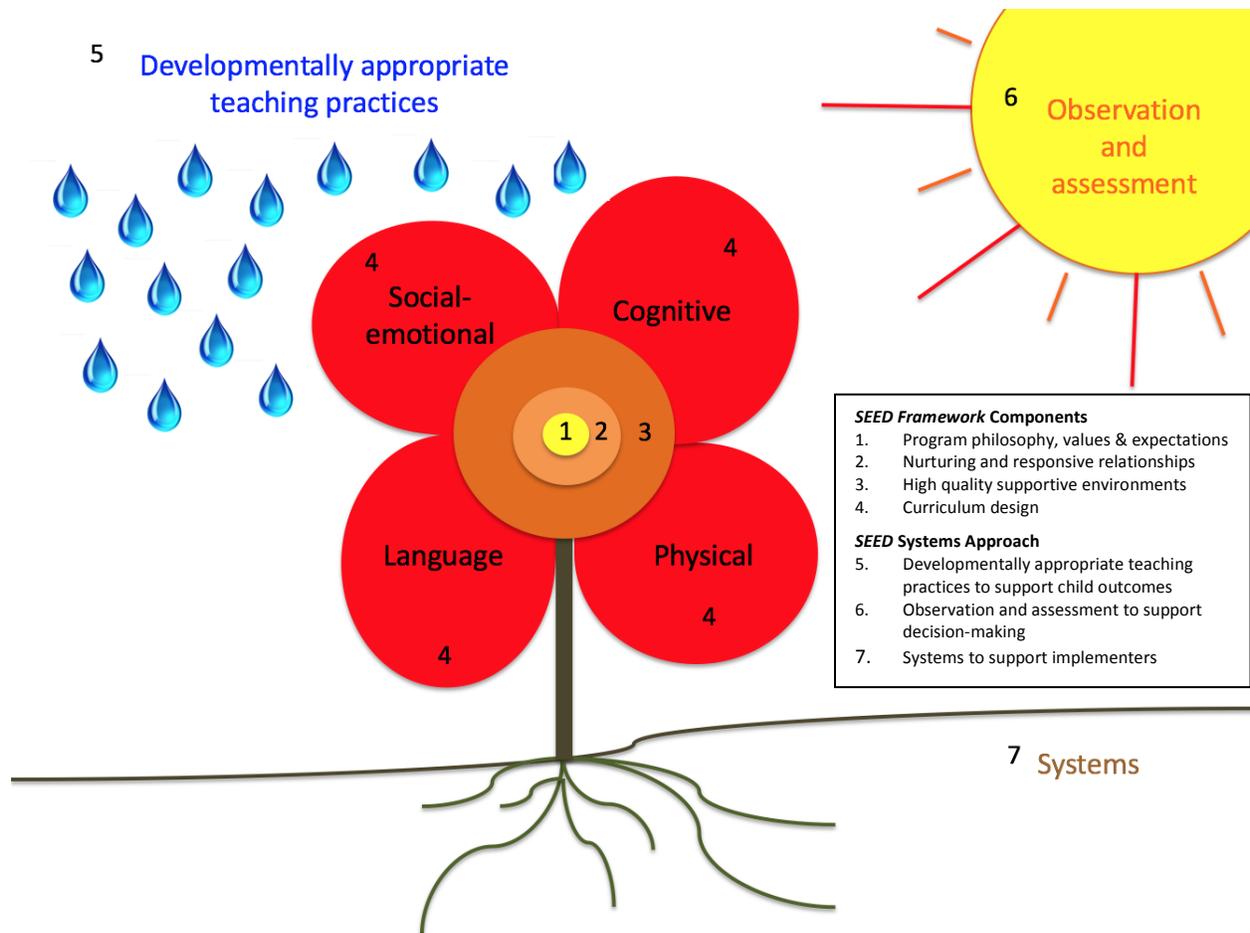


Figure 5. SEED Framework Diagram

and design of learning spaces, (b) consistent schedules and routines, (c) effective transitions, (d) defining and teaching expectations, (e) acknowledging appropriate behavior, and (f) responding consistently to challenging behavior (Fox et al., 2003). The *SEED Framework* incorporates recommendations from the *NAEYC Standards*, the *ECEE Guidelines* and the *Pyramid Model* for creating high quality indoor and outdoor physical spaces that encourage and support children’s learning across domains, that provide positive examples of sustainability and connection to place, that promote positive social interactions, and that enhance consistency and predictability.

In the design of high quality supportive environments, the *SEED Framework* encourages educators to make connections between physical arrangement and design of indoor and outdoor spaces, and important learning opportunities for environmental sustainability and social-emotional development. Expanding the typical definition of environment to go beyond physical arrangement and design to include considerations for modeling and supporting sustainability practices and attitudes and for promoting children’s independence and positive social interactions enhances the learning experience for children and adults and supports holistic child development. As an example, in order to effectively compost and recycle in an early childhood program, the physical environment needs to be arranged to make it easy for children and teachers to remember and carry out the steps. This may be accomplished by placing compost and recycle bins in proximity to the spaces where they will be needed, for example where children and adults eat or use recyclable materials such as paper. This may also be accomplished by teaching consistent routines around composting food scraps after snacks and meals and by connecting the process of composting and recycling to program expectations of caring for oneself, for others, and for the environment.

Through composting and recycling we create a high quality supportive environment that models positive examples of environmental sustainability and connects them to social values and expectations. This connection between physical environment, environmental sustainability, and social-emotional development can be made in other areas as well such as how we set up garden and play spaces outside, how children learn where to tread lightly, and the type of expectations we set around the collection of natural materials.

Designing effective curriculum. NAEYC program standards require that a program “implement a curriculum that is consistent with its goals for children and promotes learning and development in each of the following areas: social, emotional, physical, language, and cognitive” (NAEYC, 2008, Curriculum section). These curriculum areas are represented in the *SEED Framework* (Figure 5) in the petals of the flower, as these are areas where children’s development grows. It is clear how each of these areas is addressed through environmental learning within the *ECEE Guidelines for Excellence*. ECEE Guidelines focused on social and emotional growth and on developing a personal sense of responsibility and caring target social-emotional development. Physical development is addressed in the guideline focused on physical health and development. Finally, cognitive and language development are clearly addressed in guidelines focused on curiosity and questioning, development of environmental understandings, and skills for understanding the environment as well as being embedded across the other ECEE guidelines with the natural environment providing a wealth of opportunity to capitalize on young children’s inherent fascination with learning about the world around them (French, 2004).

Designing curriculum via the *SEED* lens inherently addresses learning across domains and simplifies the inclusion of social-emotional supports for programs less apt to do so in an integrated and comprehensive manner. Utilizing program expectations gives us a common language for teaching and supporting children to care for themselves, for others, and for the world around them across all settings and routines from outside exploration to meal times, group times, arrival, and even bathroom breaks. It also provides a foundation upon which to build more complex social-emotional skills such as identifying and understanding emotions, controlling anger and impulse, and problem-solving. Research and best practice recommendations from the *Pyramid Model* support educators in understanding what skills to teach young children in their programs, why those skills are important and also when and how to teach them. Without a proactive approach to teaching social-emotional skills, educators can fall into the trap of only focusing on these valuable skills during crisis situations when children have heightened anxiety and emotions. In reality, social skills can be embedded into almost any part of the daily schedule including intentional, planned teaching moments as well as taking advantage of naturally occurring opportunities throughout the day.

The SEED Systems Approach

Implementing developmentally appropriate teaching practices to support child outcomes. In the *SEED Framework* diagram (Figure 5), the teaching approach is represented by rain that nourishes the flower to grow and support children’s holistic development. The teaching approach utilized within the *SEED Framework* integrates best practice recommendations from early childhood education, environmental education, and social-emotional learning. NAEYC program standards require that “the program use developmentally, culturally, and linguistically appropriate and effective teaching approaches that enhance each child’s learning and development in the context of the program’s curriculum goals” (NAEYC, 2008, Teaching section). With programmatic goals centered on a nature-based social-emotional approach to supporting holistic child development and promoting environmental sustainability, the *SEED Framework* focuses on providing authentic experiences in natural environments where children have the opportunity to follow their interests and explore the natural world with all of their senses. The intent of this approach is to provide children with an opportunity to develop connections to people and place, to experience caring, and to develop a sense of wonder and curiosity that will inspire learning. It is guided by Rachel Carson’s depiction of the early years as a time to “prepare the soil” and a time to arouse children’s emotions and “pave the way for the child to want to know” (Carson, 1998, p. 56).

Play and exploration. In the *SEED Framework*, learning is supported through authentic, inquiry-based opportunities and children are provided with ample opportunities for play and exploration. The *ECEE Programs: Guidelines for Excellence* provides guidelines for developmentally appropriate practice as well as for play and exploration that inform the teaching approach in the *SEED Framework* (NAAEE, 2010). The natural world provides unlimited

opportunities for children to explore and learn through play from providing whole body, multisensory experiences to providing a rich context for curiosity, questioning and experimenting (Tovey, 2007). Play is “essential to development” as it “allows children to use their creativity while developing their imagination, dexterity and physical, cognitive and emotional strength” (Ginsburg, 2007, pp. 182-183). Play in the natural world also provides children with opportunities to develop an emotional connection with the environment which is an important precursor to children’s interest in learning about and wanting to protect it (NAAEE, 2010).

Caring. With caring as a central tenet of the *SEED Framework*, it is also integral in guiding the teaching approach used. Nel Noddings provides recommendations for teaching caring including: (a) modeling, (b) dialogue, (c) practice and (d) confirmation. As we seek to teach children to care for themselves, for others and for the world around them, we must first start with providing them opportunities to learn what it means to be cared for (Noddings, 1984). *Modeling* nurtures children, provides them with the experience of being cared for and provides an example of how to care. Engaging in *dialogue* about caring allows educators and students to become familiar with one another, to arrive at well-informed decisions about caring behaviors, and to permit educators to talk with students about what they are trying to show (Noddings, 2005). *Practice* is essential for authentic experience and can be intentionally planned for in early childhood settings by providing opportunities for students to engage in collaborative learning and exploration and by ensuring that each child has interactions with those that are good at caring for others in order to ensure high quality, positive practice opportunities. *Confirmation* is a powerful way of nurturing children by seeing and encouraging the best in them. In order to confirm, we must get to know children individually and be receptive to their individual strengths and needs. This allows us to “identify something admirable, or at least acceptable, struggling to emerge in each person we encounter” (Noddings, 1995, p 192).

The strategies outlined by Noddings for teaching caring, align with NAEYC program standards that call for using multiple instructional approaches when teaching young children (NAEYC, 2008). NAEYC standards state that the use of multiple instructional approaches includes “strategies that range from structured to unstructured and from adult directed to child directed” (NAEYC, 2008, Teaching section). This further aligns with recommendations from the *Pyramid Model* and from activity-based intervention for embedding social-emotional learning opportunities in planned, routine, and child-initiated activities (Fox et al., 2003; Johnson, Rahn, & Bricker, 2015). For example, in order to support young children in identifying and understanding emotions in the *Pyramid Model*, educators play games, sing songs, and read stories about feelings as part of planned activities in their program. Educators also incorporate opportunities to model and have children to identify and label their emotions as routine parts of the day such as checking in and labeling their feelings during arrival routines. Finally, educators also take advantage of naturally occurring and child-led opportunities to explore emotions by engaging in dialogue with children, labeling their feelings, modeling expression of their own emotions, and providing opportunities to discuss the feelings of other children or animals during child play and exploration (Joseph, Strain & Ostrosky, 2005). All of these experiences provide opportunity for practice and for teachers to provide confirmation to individual students as they develop caring behaviors. The *SEED Framework* encourages educators to intentionally plan for and evaluate how they are providing authentic, child-led, inquiry-based experiences as well as intentional, planned and routine learning opportunities across target outcomes of supporting child development, social competence and environmental sustainability.

Conducting observation and assessment to support decision-making. NAEYC program standards focus on assessment of child progress through ongoing systematic, formal, and informal approaches (NAEYC, 2008). ECEE guidelines require that “educators possess the knowledge and skills to assess learner progress and evaluate the effectiveness of their own programs” (NAAEE, 2010, p. 56). The *Pyramid Model* emphasizes collecting and using data for decision-making (Fox et al., 2003). In each case, the focus on assessment and evaluation emphasizes objective observation using a variety of strategies in natural contexts for the purpose of informing effective decision-making and planning.

The *SEED Framework* uses the term observation to provide a comprehensive and flexible approach to both modeling important skills for young children and to observing the dynamic interactions between children and their environment that can guide program curriculum and activities. In the *SEED Framework* diagram (Figure 5), observation is represented by the sun as it illuminates children’s learning and development and lights the way for

educators to support each individual child. Programmatic observation also provides feedback on how well a program is meeting its' goals of supporting social-emotional competence, child development and environmental sustainability. In the *SEED Framework*, observation and assessment include objective evaluation of implementation and program outcomes in each area of the framework. Observation or data systems are established to define outcomes and guide evaluation of implementation efforts and practices. Within the *SEED Framework*, the careful selection, definition, and acknowledgement of valued program-specific outcomes (e.g., social competence, child development, and environmental sustainability) are used to guide curriculum and interactions with children as well as to measure progress.

Designing systems to support program implementers. Beyond effective practices to support children's behavior and observation and assessment to support decision-making, the *SEED Framework* also emphasizes the importance of developing systems to support teachers and staff – both for initial implementation and for sustainability of practices over time. NAEYC program standards address systems in their standards for teachers and for leadership and management. NAEYC standards state that teaching staff “has the educational qualifications, knowledge, and professional commitment necessary to promote children's learning and development and to support families' diverse needs and interests” (NAEYC, 2008, Teachers section). In regards to leadership and management, NAEYC requires that programs “effectively implement policies, procedures, and systems that support stable staff and strong personnel, fiscal, and program management so all children, families, and staff have high quality experiences” (NAEYC, 2008, Leadership and Management section).

The *ECEE Guidelines* provide standards for the planning and implementation of educator preparation. They include: (a) foundations of ECEE, (b) professional responsibilities of the educator, (c) environmental literacy, (d) planning and implementing environmental education, (e) fostering learning, and (f) assessment and evaluation (NAAEE, 2010). The *Pyramid Model* includes educator preparation and management and provides a valuable example for developing systems that target: (a) establishing commitment from administrator's and staff, (b) developing a team dedicated to development and implementation of the framework, (c) conducting regular assessment of program implementation, (d) utilizing data to inform decision-making, and (e) supporting family involvement (Carter, 2011).

Within the *Pyramid Model*, several tools have been developed to support programs in implementing effective practices, data, and systems. The tools themselves, such as the *Pre-Team Implementation Checklist* (Pre-TIC; Carter, 2011), a self-assessment tool that guides program planning and implementation, are a component of developing effective systems. A similar tool is in development for the *SEED Framework*. With or without a tool, the message remains the same. Programs need to consider the systems they are putting in place to make implementation of effective practices and informative data collection easy and efficient for teachers and staff. By supporting implementers, programs are more likely to achieve goals and develop sustainable practices. In the *SEED Framework* diagram, systems are represented by the soil as they provide important nutrients to the flower and provide a foundation to support teachers and staff.

Conclusion

Integrating early childhood education, environmental education, and social-emotional supports within and throughout the entirety of an early childhood program helps to enhance holistic child development. A nature-based approach, whether through an entirely outdoor program or through a balance of outside time and bringing nature inside, lends itself to providing rich opportunities for social-emotional development as well as cognitive, physical, and language learning. Nature is dynamic, providing an evolving landscape for children to explore physically, emotionally, and cognitively and lending itself to engage children in scientific processes such as observing, questioning, predicting experimenting, summarizing, and sharing results (Gerde, Schachter, & Wasik, 2013). These scientific processes that are often discussed in relation to exploring the world around us, are not dissimilar from the processes and skills required to explore our own emotions and solve social problems. Learning in and through nature opens a valuable lens for social and emotional development and for teaching and learning about caring.

Programs of any type from forest kindergartens and nature-based preschools to more traditional center-based early childhood programs can utilize the systemic approach of the *SEED Framework* to identify their strengths and

challenges in each area and enhance their balanced integration of early childhood education, environmental education, and social-emotional supports through practical interventions, informative observation methods, and a systems perspective.

Programs that provide wonderful, in-depth environmental literacy experiences with less focus on social-emotional development may find that enhancing their integration of social-emotional supports engages children emotionally in what they are learning, improves children's ability to communicate about their own and others' feelings, and enhances children's social interactions and support of one another (Bovey & Strain, n.d.; Joseph & Strain, 2003, 2006, 2010). Programs that emphasize child development with less focus on environmental literacy and connection to nature may find that enhancing nature-based experiences stimulates children to explore physically, cognitively, and emotionally (Kellert, 2002, 2005). The *SEED Framework* provides a guide for early childhood programs to support holistic child development through harmonious, balanced integration of early childhood education, environmental education, and social-emotional supports. With valued outcomes of social competence, child development and environmental sustainability in mind, the *SEED Framework* integrates disciplines in order to support a caring pedagogy and Ruth Wilson's depiction of ECEE as a field focused on doing work that is both good for the earth and good for the children and contributes to "the making of beautiful people".

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